

Amendments to the Specification:

Please replace the paragraph on page 1, lines 14-20, with the following amended paragraph:

1
A Digital communication techniques have been developed and implemented in communication systems, including communication systems utilizing radio channels. Digital communication techniques generally permit the communication system in which the techniques are implemented to achieve ~~achieve~~ greater transmission capacity as contrasted to the capacity available with conventional analog communication techniques.

Please replace the paragraph beginning on page 3, line 29 and ending on page 4, line 9 with the following amended paragraph:

2
A The ability to obtain reliable channel estimates affects the system performance considerably. A common way of estimating the channel in TDMA (time division multiple access) is to transmit a training sequence and evaluate a Least square (LS) estimate of the channel at the receiver based on the knowledge of the training sequence. The LS channel estimate is basically a noisy version of the exact channel estimate. Hence, this technique relies on a low noise environment. Simulations show that for an ~~a~~ uncoded system, a gap of about three dB at BER floor of 0.01 exists when using the LS channel estimate in comparison to using the exact channel estimate. This points out the advantages of using interpolation coefficients (with the least possible complexity) to enhance the LS channel estimate.

Please replace the paragraph beginning on page 4, line 22, and ending on page 5, line 2 with the following paragraph:

3
A In the paper authored by J.J. Vande Beek, O. Edfors, M. Sandell, S. K. Wilson, and P. O. Borjesson, "OFDM Channel Estimation with Singular Value Decomposition," in proc. 46th IEEE on Vehicular Technology Conference, Atlanta, GA, Apr. 1996, pp. 923-927, interpolation in the frequency domain is used to enhance the ~~LT~~ LS estimate.

Cont
A3
This technique suffers from increased complexity due to the requirement of a matrix inversion. This technique was modified to include low rank approximation in the interpolator to decrease complexity, however, the modified technique requires estimation of a group of dominant eigenvalues and eigenvectors for every transmission burst. Since performing such eigendecomposition is a complex task, the modified technique suffers from complexity as well.

Please replace the two paragraphs on page 6, lines 4-25, with the following two paragraphs:

The invention presents a method and ~~an~~ apparatus for estimating channels in orthogonal frequency division multiplexed (OFDM) communication systems. The method and apparatus allows a channel estimate to be determined independent of having knowledge on channel statistics. The method and apparatus may be implemented in OFDM systems having single or multiple transmitting antennas.

A4
In an embodiment of the invention, the method and apparatus is implemented in an OFDM system utilizing at least two antennas. Channel estimation is performed by determining and then utilizing a least square (LS) estimate and an interpolation coefficient for each transmitting antenna. According to the embodiment of the invention, the interpolation coefficient is determined independently from the statistics of the channel, i.e., without needing the channel multipath power profile (CMPP). The interpolation coefficient is determined by estimating the maximum delay encountered ~~encounted~~ by the channel, calculating a maximum number of multipaths L by dividing the maximum delay by the transmitted symbol duration, creating a channel multipath power profile for the receiver using L, and performing a fast fourier transform (FFT) on the multipath power profile to generate a frequency correction vector which is used to determine an interpolator coefficient in the form of an interpolator matrix **M**. The interpolator matrix **M** is then multiplied ~~multiplied~~ by an LS estimate for each transmitting antenna to determine the channel estimate for each channel.
